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Application No. 10/759,449
Amendment dated June 22, 2007
Reply to Office Action of March 22, 2007

Docket No.: 65765-0085

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REMARKS

Applicant wishes to thank the Examiner for the telephonic interview conducted June 19, 2007 with attorney Kennedy and Examiner Patterson. The Yokoyama reference (WO 97/294490; USP 6,190,578 in translation) was discussed in connection with the pending claims. No agreement was reached.

Thorough examination and careful review of the application by the Examiner is noted and appreciated. Claims 5 and 17 have been amended. After entry of this amendment, claims 1-27 will be pending. No new matter has been added.

The Rejections Under 35 U.S.C. §102

The Examiner rejected claims 1, 7, 11-13, 19 and 23-27 under 35 U.S.C. §102 (b) as being anticipated by Yokoyama (WO 97/294490; USP 6,190,578). These rejections are respectfully traversed. Independent claims 1 and 11-13 require, among other things, "from about 20-30% by weight of an SBS block co-polymer; from about 5-20% by weight polystyrene; and from about 30-45% by weight of an epoxy resin." Yokoyama does not disclose the claimed ingredients in combination with one another in the claimed amounts.

Yokoyama discloses a laundry list of ingredients (over 25 different ingredients) that can be included in an organic binder. [Yokoyama col. 8 lines 22-56]. Yokoyama suggests that at least one of the 25+ ingredients can be included in the organic binder, but does not call out the specific combination of SBS block co-polymer with polystyrene and epoxy resin. Indeed, although two of the examples (examples 1 and 13) include SBS with epoxy resin, none of the 28 examples include polystyrene as an ingredient. [Yokoyama Table 5]. Although the Examiner argues to the contrary, it is inaccurate to state that "SBS block copolymer is a polystyrene". SBS is not a polystyrene. That is, for example, why Yokoyama lists the two different polymers separately in the laundry list of possible ingredients that can be included an organic binder. [Yokoyama col. 8 lines 22-56]. As is well known in the art, polystyrene is a homopolymer having certain chemical and physical properties. In contrast, SBS is a styrene-butadiene-styrene block co-polymer made up of a short

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chain of polystyrene followed by a long chain of polybutadiene, followed by another short chain of polystyrene. Just as water has different properties than hydrogen and oxygen, SBS block copolymer has different chemical properties and different physical properties than the homopolymers polystyrene and polybutadiene.

Since Yokoyama does not disclose the specific combination of SBS block-copolymer, polystyrene and epoxy resin, it certainly does not teach the particular weight percents of each of these ingredients in combination, as required by the pending claims. Nevertheless, the Examiner has argued that 60% of the weight of the composition disclosed in Yokoyama is organic binder, which can comprise equal amounts of epoxy resin and SBS, which would be 30% of the epoxy resin and 30% SBS. This is inaccurate. Yokoyama does not disclose SBS and epoxy resin in equal amounts. Rather, it discloses a broad range of ratios of organic binder to epoxy resin, generally. With respect to epoxy resin to SBS ratios, Yokoyama discloses only two: 6:1 in example 1 and 7:1 in example 13. No 1:1 ratio is disclosed, as the Examiner argues.

Next, the Examiner takes the 30% SBS that he mistakenly assumes is disclosed in Yokoyama, and arbitrarily divvies that up into three separate amounts (24%, 5% and 1%), arguing that the SBS block copolymer is 24% of the total composition of Yokoyama, that SBS block copolymer characterized as the homopolymer polystyrene is 5% of the total composition, and the SBS block copolymer characterized as rubber is 1% of the total composition. It is incorrect to characterize SBS block copolymer as polystyrene. Additionally, there is no support in Yokoyama for divvying up one ingredient and treating it as three distinct ingredients in Yokoyama and arbitrarily assigning weight percentages to those three ingredients.

The Yokoyama reference simply does not anticipate claims requiring the combination of, among other things, "from about 20-30% by weight of an SBS block co-polymer; from about 5-20% by weight polystyrene; and from about 30-45% by weight of an epoxy resin". Thus, Applicant respectfully requests withdrawal of the 35 U.S.C. §102 rejection of claims 1, 7, 11-13, 19 and 23-27.

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The Rejections Under 35 U.S.C. §103

The Examiner rejected claims 2, 4-6, 14, and 16-18 under 35 U.S.C. §103 (a) as being unpatentable over Yokoyama in view of Wycech (USP 5,755,486). The Examiner also rejected claims 3 and 15 under 35 U.S.C. §103 (a) as being unpatentable over Yokoyama in view of Wycech and further in view of Kawasaki (USP 5,782,730). Moreover, the Examiner rejected claims 8-9 and 20-21 under 35 U.S.C. §103 (a) as being unpatentable over Yokoyama in view of Wycech and further in view of Rowland (USP 4,692,513). Finally, the Examiner rejected claims 10 and 22 under 35 U.S.C. §103 (a) as being unpatentable over Yokoyama in view of Wycech and Kawasaki and Rowland and Bagga (USP 5,021,513). These rejections, all of which require the combination of Yokoyama and Wycech, are respectfully traversed.

The Pending Claims Are Not Obvious

A. Yokoyama and Wycech are not a proper combination

One of ordinary skill (and of ordinary creativity under *KSR v. Teleflex*) would not combine the Yokoyama and Wycech references. The references are from non-analogous art fields and the Examiner has not shown how or why someone of skill in the art would combine them.

On one hand, Yokoyama teaches an anisotropic conductive composition used in panels of liquid crystal displays, plasma displays, and portable phones, among other things. Yokoyama addresses the problem of forming a composition that is insulative and has a high conductivity. On the other hand, Wycech teaches an expandable structural reinforcement material used in the automotive industry. Wycech addresses the prior art problems of making light-weight and high-strength structural reinforcing members.

There is no reason one of skill in the art looking to improve on the anisotropic conductive composition of Yokoyama (the Examiner's primary reference) would turn to the expandable reinforcement materials disclosed in Wycech. Similarly, there is no reason one of skill in the art looking to improve upon the reinforcement materials used in the auto industry would turn to the recipes for conductive compositions used for, among other things, personal electronics. This, Yokoyama and Wycech are an improper combination of references for an obviousness rejection

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under 35 U.S.C. § 103. Because the combination of Yokoyama and Wycech is present in all of the Examiner's obviousness rejections, Applicant respectfully requests withdrawal of same.

B. The Combination Of Yokoyama And Wycech Does Not Teach Or Suggest All Of The Elements Of Applicant's Claims

Even if combined, Yokoyama and Wycech still do not teach, disclose, or suggest all the elements of Applicant's independent claims. The Examiner makes the argument that Yokoyama teaches SBS block co-polymer together with polystyrene and rubber and epoxy resin in the claimed ranges of weight percent. This is inaccurate, as explained above.

Additionally, it is not obvious to combine these ingredients together in the particular weight percentages found in the claims. Indeed, Applicants have found that the relative weight percentages of SBS block co-polymer with polystyrene and epoxy resin are important, and when used in an expandable composition, bring about an unexpected result.

In particular, polystyrene acts a sponge for both SBS and epoxy resin. If too much SBS is included in the formulation, it displaces the epoxy resin from the polystyrene, and the resulting formulation does not have the desired traits for an expandable reinforcer composition that can adhere to the surface of a structural member. Similarly, if too little SBS is included, the expandable reinforcer composition does not have the desired mechanical properties, such as compressive strength. Thus, a delicate balance is required among the claimed ingredients, none of which is taught or disclosed by Yokoyama.

Moreover, when the claimed formulation is expanded, Applicants achieved the surprising result that the particular combination of ingredients, in their relative amounts, led to a composition that both expanded to a high degree (80-220%) while maintaining such a high degree of compressive strength (at least about 1400 psi). As explained in earlier amendments and appeal briefs, this is surprising because one of skill in the art would expect that, the more the composition expands, the less likely it would be able to maintain such a compressive strength.

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C. The Combination of Yokoyama, Wycech, Kawasaki, Rowland, and Bagga Does Not Teach Or Suggest All Of The Elements Of Applicant's Claims

The Examiner rejected claims 3, 8-10, 15 and 20-22 under 35 U.S.C. §103 as allegedly being obvious over Yokoyama and Wycech, and in various combinations with of Kawasaki, Rowland and Bagga. These rejections are respectfully traversed. For the reasons discussed above, which are hereby incorporated, Yokoyama and Wycech do not disclose all elements of independent claims 1, and 11-13, from which claims 3, 8-10, 15 and 20-22 ultimately depend. Combination with Kawasaki, Rowland, and Bagga do not cure the deficits of Yokoyama and Wycech. For at least these reasons, Applicant respectfully requests reconsideration and withdrawal of the obviousness rejections of claims 3, 8-10, 15 and 20-22.

D. Miscellaneous Correction

Applicant has identified a typographical error in claim 18. The range in claim 18 should read "0.1-5%". However, in recent communications between the Applicant and the USPTO, it has mistakenly been represented in the claim listings as "0.5-5%", even though the claim was never amended. Applicant has corrected the error in this communication. No amendment is necessary.

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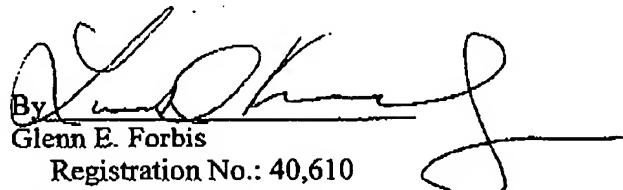
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CONCLUSION

For at least these reasons, all pending claims in the application are now in condition for allowance. It is believed no additional fees are due with this response. However, if any additional fees are required in connection with the filing of this paper that are not identified in any accompanying transmittal, permission is given to charge our Deposit Account No. 18-0013 under order No. 65765-0085 in the name of Rader, Fishman and Grauer PLLC. If the Examiner has any questions or comments, he is kindly urged to call the undersigned to facilitate prosecution.

Dated: June 22, 2007

Respectfully submitted,


By _____

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